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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/748,302 | 12/31/2003 | Thomas J. Drury | X-9449 | 8423 |
| 615 | 7590 | 02/23/2006 | EXAMINER | |
| JOHN S. HALE GIPPLE & HALE 6665-A OLD DOMINION DRIVE MCLEAN, VA 22101 | | | CHANG, VICTOR S | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1771 | | |

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/748,302 | DRURY, THOMAS J. | |
| | Examiner Victor S. Chang | Art Unit 1771 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 January 2006.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Introduction

1. The Examiner has carefully considered Applicants' declaration, amendments and remarks filed on 1/25/2006. Applicants' amendments to claims 10 and 13 have been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. Rejections not maintained are withdrawn. In particular, in response to Applicant's amendment, Declaration and argument "...Bahten ...use starch for the pore former while ... Rosenblatt, Cercone ... use air as the pore former. These different pore formers are not and cannot be combined ...", the Examiner has rewritten the grounds of rejection based on the Bahten reference alone with a different interpretation of the previously applied reference, Applicant's arguments are moot.

Claim Rejections - 35 USC § 112

4. Claims 18-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner repeats (see Office action mailed 7/25/2005, section 3) that at line 5 of each of claims 18 and 20, the phrase "said pores forming substantially empty cavities" added in preliminary amendment filed 12/31/2003 is new matter. Despite Applicant's response stating "... the term "substantially empty cavities" ... means that cavities are not filled with liquid or solid material. If a material has a pore size, it means to anyone skilled in the art that these are empty areas or cavities within the material" (Remarks, page 4, top paragraph), the Examiner notes: 1) Applicant still fails to provide any express or inherent support in the specification for the term. 2) The terms "substantially empty" and "empty" are not equivalent, no support for the term "substantially" and its intended scope can be found in the specification. 3) Even if a porous material inherently has voids, and the voids are devoid of liquid or solid, unless the void is formed under and/or maintained vacuum, it contains air, i.e., it is not "empty", and it is unlikely the void is in a state of being a vacuum when gas is used as pore former (Remarks, page 4, bottom paragraph). Again, Applicant is requested to provide clear supports for aforementioned elements in the next reply, and unsupported new matter must be cancelled.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-22 are rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bahten (US 6076662), and evidenced by Cercone et al. (US 6027573) and Rosenblatt (US 4098728), generally as set forth in section 7 of Office action mailed 7/25/2005, together with the following reasoning and response to argument.

First, the Examiner repeats the relied upon prior art as follows: Bahten's invention is directed to a sponge or porous polymeric product such as an ultra clean "scrubbing" brush (cleaning device) for the manufacturing of integrated circuits (column 1, lines 23-27). The cleaning device comprises a polyvinyl acetal porous elastic material having an average pore size 10 to 200 microns (column 4, lines 11-19), and may be shaped as a roller which may have a smooth surface, or may be shaped as a pad or a disk (column 3, lines 44-53). The roller may have an outer diameter of about 60 mm and an inner diameter of about 32 mm (column 11, lines 42-47).

For claims 1, 3, 4-6, 8 and 22, Bahten teaches a cleaning device as claimed, except that Bahten is silent about the uniformity and size distribution of the pores. However, since Bahten is directed to the same subject matter (an ultra clean "scrubbing" brush), comprised of the same polyvinyl acetal porous elastic material, and for the same application (manufacturing of integrated circuits), in the absence of evidence to the contrary, it is the Examiner's position that a suitable uniformity and size distribution of the pores are either anticipated by Bahten, or obviously provided by practicing the invention of prior art. It should be noted that where the claimed and prior art products are shown to be identical or substantially identical in structure or

composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

For claim 2, Bahten expressly shows in Fig. 1A) that one embodiment of the brush roller has a smooth outer surface (column 3, lines 46-49).

For claims 7 and 9, while Bahten is silent about the “bubble point pressure” or “mean flow pore pressure” of the porous polyvinyl acetal material, it is noted Bahten does teach the same subject matter (a porous polyvinyl acetal) and for the same application (ultra clean “scrubbing” brush for integrated circuits or semiconductors), it is the Examiner’s position that, in the absence of evidence to the contrary, a suitable “bubble point pressure” or “mean flow pore pressure” is either anticipated by Bahten, or obviously provided by practicing the invention of the prior art. It should be noted that where the claimed and prior art products are shown to be identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01.

For claims 10-18, since they claim essentially the same scope of limitations as claims 1-9, they are also rejected for the reasons as set forth above.

For claims 19 and 20, the Examiner notes that since Bahten does teach the same subject matter of instant invention, as set forth above, in the absence of evidence to the contrary, a suitable “cleaning solvent flow rate through the roller” or “dry flow rate”

is also either anticipated by Bahten, or obviously provided by practicing the invention of the prior art.

For claim 21, although Bahten is silent about the residual formaldehyde content in the ultra clean “scrubbing” brush, Bahten does teach that the devices are subjected to washer/extraction step to remove impurities, and the devices are substantially free from impurities (column 7, line 65 to column 8, line 4). As such, in the absence of evidence to the contrary, a suitable low level of residual formaldehyde is also either anticipated by Bahten, or obviously provided by practicing the invention of the prior art.

Response to Arguments

7. Applicant’s arguments, referring to the Declaration of Thomas Drury, “... the present invention has three surprising results ... (1) the doubling of the effective use life of roller; (2) a minus defect rate; and (3) a significant reduction of chemical and water usage ... a minus defect rate means that the inventive rollers cure manufacturing defects which occur in other areas of the chip manufacture ...” (Remarks, page 4, third paragraph) have been carefully considered, but are not persuasive. In response, the Examiner notes: 1) The results provided by Exhibit A in the Declaration are a comparison between the instant invention and Rippey brush. However, there is no evidence that the Rippey brush is the same as Bahten brush. In particular, no structural characterizations (e.g., pore size, etc.) have been provided to ensure a fair comparison. As such, the Declaration is insufficient to affirm the above-mentioned results are surprising or unexpected. 2) The Examiner respectfully reminds Applicant that, in the

absence of evidence to the contrary, Bahten either anticipates, or obviously provided by practicing the invention of prior art, which reads on the instant invention as claimed, as set forth above.

With respect to Applicant's argument "...Bahten ...use starch for the pore former while ... Rosenblatt, Cercone ... use air as the pore former. These different pore formers are not and cannot be combined ..." (Remarks, page 4, bottom paragraph), the Examiner notes: 1) No where Bahten teaches the use of starch as pore former, or being limited to any particular pore forming method, and in the absence of factual support, Attorney's argument cannot take place of evidence. 2) The above rewritten grounds of rejection do not combine the references. While it is no longer relied upon, the teachings of Rosenblatt and Cercone (see Cercone, column 2, line 41 to column 3 line 14; and Rosenblatt, abstract and column 4, lines 7-9) appear to be an evidentiary support that suitable uniformity and size distribution of the pores are known to one of ordinary skill in the art of an ultra clean "scrubbing" brush for manufacturing of integrated circuits, and in the absence of evidence to the contrary, a suitable uniformity and size distribution of the pores are either anticipated by Bahten, or obviously provided by practicing the invention of prior art, as set forth above.

With respect to Applicant's argument "The previously cited Cercone '573 patent is an extension of the Rosenblatt '728 technology ... pore range is so wide, means that the pore size is not controlled ... the pore size can not be controlled in a tight range ... and form an inconsistent skin on the surface of the sponge ... negatively impacts the flow rate and surface properties ..." (Remarks, page 5), the Examiner notes: 1) Again,

the teachings of Rosenblatt and Cercone are no longer relied upon, as set forth above, Applicant's argument is moot. 2) Nevertheless, Applicant is reminded that Rosenblatt does teach a polyvinyl acetal porous foam having a controlled uniform pore size and uniform pore distribution as a desirable feature (abstract and column 4, lines 7-9). While Rosenblatt also teaches the capability of making a wide range of pore size, Applicant fails to provide any evidence that the pore size of Rosenblatt's invention cannot be controlled in a tight range, and in the absence of factual support, attorney's argument cannot take place of evidence. In particular, it is noted that Rosenblatt makes the polyvinyl acetate foam by essentially the same technology as instant invention, i.e., gas is used as pore former. 3) The Examiner repeats that, in the absence of evidence to the contrary, Bahten either anticipates, or obviously provided by practicing the invention of prior art, which reads on the instant invention as claimed, as set forth above.

With respect to Applicant's argument "... the reference's ranges were so broad as to be meaningless, and provided no guidance on how to construct a product with the patented invention's benefits" (Remarks, page 6, second paragraph), the Examiner notes: 1) Bahten's teaching reads on the pore size range of instant invention as claimed. 2) Since the product is directed to the same subject matter, made with the same material, and used for the same application, a *prima facie* case of either anticipation or obviousness has been established. See MPEP § 2112.01. 3) While Bahten is silent about the specific benefits demonstrated in the Declaration, the results merely appear as a recognition of latent properties, and Declaration appears to be

insufficient to affirm the above-mentioned results are surprising or unexpected, as set forth above.

Finally, with respect to Applicant's argument "... The uniform pore size and porosity is not disclosed by Bahten '662 ... It is also not obvious to reduce formaldehyde to levels of the present invention ... Such rejections are pure hindsight rejections based on supposition and not the prior art" (Remarks, pages 7-8, bridging paragraph), the Examiner asserts: 1) Again, in the absence of evidence to the contrary, Bahten either anticipates, or obviously provided by practicing the invention of prior art, which reads on the instant invention as claimed, as set forth above. 2) Although Bahten is silent about the residual formaldehyde content in the ultra clean "scrubbing" brush, Bahten does teach that the devices are subjected to washer/extraction step to remove impurities, and the devices are substantially free from impurities. As such, in the absence of evidence to the contrary, a suitable low level of residual formaldehyde is also either anticipated by Bahten, or obviously provided by practicing the invention of the prior art, as set forth above. 3) In response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In the instant case, nothing that was relied on could be gleaned only from

Appellants' disclosure. Specifically, clearly Bahten offers all the suggestions that could be useful to a practitioner of an ultra clean "scrubbing" brush.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S. Chang whose telephone number is 571-272-1474. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H. Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Victor S Chang
Victor S Chang
Examiner
Art Unit 1771

2/21/2006